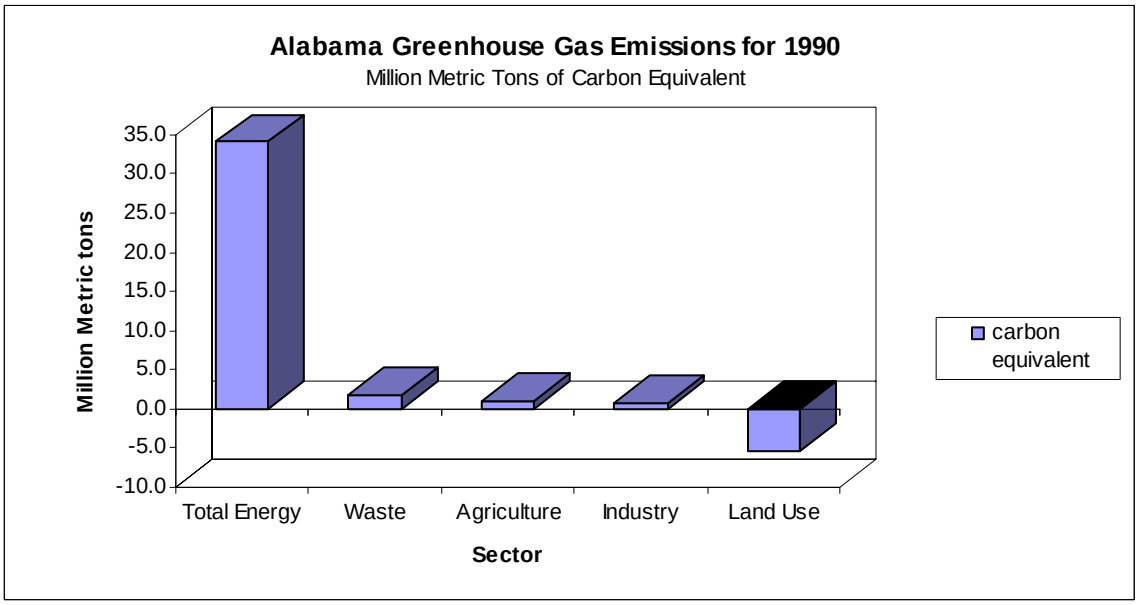
ALABAMA GREENHOUSE GAS EMISSIONS AND SINKS INVENTORY: SUMMARY



The report "*Inventory of Alabama Greenhouse Gas Emissions and Sinks: 1990*" provides a detailed inventory of greenhouse gas emissions and sinks for Alabama in 1990. Emissions were estimated using methods from EPA's 1992 guidance document ***State Workbook: Methodologies for Estimating Greenhouse Gas Emissions***. In 1990, Alabama emitted 32.2 million metric tons of carbon equivalent (MMTCE). In addition, Alabama estimated emissions of 1.1 MMTCE from biomass fuels and from other sources not included in the workbook. Emissions from these sources are not included in the reported total or the table below.[1,2]

The principal greenhouse gas was carbon dioxide, comprising 92.3 million metric tons (25.2 MMTCE). Other emissions included methane, with 1.2 million metric tons (6.6 MMTCE) and 0.005 million metric tons of nitrous oxide (0.4 MMTCE).

[1] Note that the state of the art emission inventory method has advanced since Alabama completed its inventory; therefore, we have made the following adjustments to Alabama's emission estimates. First, we excluded emission estimates for sources not covered by the most recent inventory guidance (http://www.epa.gov/ttnchie1/eiip/techrep.htm#green). These emissions include carbon dioxide from other biomass fuels. Second, we used updated carbon coefficients for some fuel types. Third, we used updated values for global warming potentials.

[2] In addition, the Alabama inventory estimated emissions of non-methane volatile organic compounds, carbon monoxide, and nitrogen oxides, which are greenhouse gases for which global warming potentials have not yet been developed.

Alabama Greenhouse Gas Emissions for 1990

BY SECTOR	CO_2 (MMTCE)	Methane (MMTCE)	Nitrous Oxide (MMTCE)	HFCs, PFCs, and SF6 (MMTCE)	Total GHG Emissions (MMTCE)
Energy - Residential	0.9	*	*	*	0.9
Energy - Commercial	0.7	*	*	*	0.7
Energy - Industrial	8.2	*	*	*	8.2
Energy - Transport	7.8	*	*	*	7.8
Energy - Utility	13.5	*	*	*	13.5
Energy – Exported Electricity	*	*	*	*	*
Energy - Other	-1.2	4.0	0.3	*	3.1
Total Energy	**29.8**	**4.0**	**0.3**	*	**34.1**
Waste	*	**1.8**	*	*	**1.8**
Agriculture	*	**0.8**	**0.2**	*	**1.0**
Industry	**0.7**	*	*	*****	**0.7**
Land Use	**-5.4**	*	*	*	**-5.4**
TOTAL	**25.2**	**6.6**	**0.4**	*****	**32.2**

All emissions are reported in million metric tons of carbon equivalent (MMTCE).

An asterisk (*) indicates that emissions of the gas from this sector were zero, insignificant, or not reported.

Emissions due to coal mining and extraction of natural gas and oil are included in the energy – other figures, and emissions from biofuel combustion are excluded.

The major source of carbon dioxide emissions was fossil fuel combustion (98%), the majority of which is due to utility coal and transportation petroleum. Minor emissions came from cement production, lime manufacture, and limestone use (2%). Carbon dioxide sinks (non-fuel usage, timber stock, and other forest resources) offset about 17% of the total carbon dioxide emissions. Sources of methane emissions were coal mining (57%), landfills (27%), domesticated animals (9%), manure management (4%), natural gas/oil extraction (3%), fossil fuel combustion (<1%), and wastewater (<1%). Nitrous oxide emissions were attributable to fossil fuel combustion (61%), and agricultural soils (39%).

Alabama's high per-capita GHG emissions are largely due to the state's significant level of coal production, and its reliance on coal for energy. Alabama mines a substantial amount of coal (it ranks 12th in the nation for coal production), and its coal deposits have the highest methane content in the country. Thus coal production in Alabama results in substantial methane emissions. Coal also represents 40 percent of the state's energy supply, compared to 23 percent for the US as a whole. Because more carbon is emitted per unit of energy from coal than from any other fuel, Alabama's reliance on coal results in higher GHG emissions per unit of energy than for the US as a whole.

Alabama's emissions in 1990 were 8.0 MTCE per capita, compared to 1990 U.S. emissions of 6.4 MTCE per capita. Alabama's per capita emissions are high due to the large volume of coal related activities in the state.